

1. Record Nr.	UNISA996202137103316
Titolo	Modern acetylene chemistry // edited by P. J. Stang and F. Diederich
Pubbl/distr/stampa	Weinheim, [Germany] : , : VCH, , 1995 ©1995
ISBN	1-281-84274-5 9786611842741 3-527-61527-X 3-527-61526-1
Descrizione fisica	1 online resource (530 p.)
Disciplina	547.413
Soggetti	Acetylene
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Modern Acetylene Chemistry; Contents; Foreword; List of Contributors; 1 Modern Computational and Theoretical Aspects of Acetylene Chemist; 1.1 Introduction; 1.2 Electronic structures of acetylene and monoacetylenes; 1.2.1 Ground-state potential energy surfaces; 1.2.2 Excited-state potential energy surfaces; 1.2.3 Radical Ions; 1.3 Reactivities and molecular interactions of acetylenes; 1.3.1 Pericyclic reactions; 1.3.2 Electrophilic reactions; 1.3.3 Nucleophilic additions; 1.3.4 Radical additions; 1.3.5 Molecular complexes; 1.4 Polyacetylenes; 1.4.1 Diacetylene; 1.4.2 C <sub>n</sub> and cyclic C <sub>n</sub> 1.4.2.1 C <sub>21</sub> 1.4.2.2 C <sub>3</sub> ; 1.4.2.3 C <sub>4</sub> ; 1.4.2.4 C <sub>5</sub> , C <sub>7</sub> , and C <sub>9</sub> ; 1.4.2.5 C <sub>6</sub> , C <sub>8</sub> and C <sub>10</sub> ; 1.4.2.6 C <sub>11</sub> to C <sub>17</sub> ; 1.4.2.7 C <sub>18</sub> ; 1.5 Conclusion; References; 2 Functionalized Acetylenes in Organic Synthesis - The Case of the 1-Cyano- and the 1-Halogenoacetylenes; 2.1 Introduction; 2.2 Synthesis and preparative use of cyanoacetylenes; 2.2.1 Synthesis; 2.2.2 Preparative use of cyanoacetylenes; 2.2.2.1 A short summary of the older literature; 2.2.2.2 Novel cycloadditions with cyanoacetylenes - simple and efficient methods for the construction of complex carbon frame 2.2.2.3 Cyanoacetylenes as precursors for reactive and interstellar

intermediates  
2.3 Synthesis and preparative use of 1-halogenoacetylenes; 2.3.1 Older review of the literature on halogenoacetylenes; 2.3.2 Synthesis of 1-halogenoacetylenes; 2.3.2.1 The preparation of the 1-Halogeno- and 1,2-Dihalogenoethynes; 2.3.2.2 More highly unsaturated halogenoacetylenes; 2.3.2.3 Derivatives of 1-halogenoacetylenes; 2.3.3 Novel preparative uses of 1-Halogeno- and 1,2-Dihalogenoacetylenes; 2.4 Experimental procedures; 2.4.1 Cyanoacetylene (1); 2.4.2 Dicyanoacetylene (2); 2.4.3 Dicyanodiacetylene (3)  
2.4.4 Chloroacetylene (93) 2.4.5 Dichloroacetylene (100); 2.4.6 Diiodoacetylene (105); References; 3 Alkynyliodonium Salts: Electrophilic Acetylene Equivalents; 3.1 Introduction; 3.2 Preparation and properties; 3.2.1 Alkynyliodonium sulfonates; 3.2.2 Alkynyliodonium tetrafluoroborates; 3.2.3 Heterocyclic alkynyliodonium species; 3.2.4 Mechanism of formation; 3.2.5 Diynyliodonium and dialkynyliodonium triflates; 3.2.6 Bis-iodonium species; 3.2.7 Properties of alkynyliodonium salts; 3.3 Characterization and structure; 3.3.1 Spectroscopic properties; 3.3.2 X-ray and molecular structure  
3.4 Reactions and uses of alkynyliodonium salts  
3.4.1 Reaction with nucleophiles; 3.4.1.1 Carbon nucleophiles; 3.4.1.2 Nitrogen nucleophiles; 3.4.1.3 Oxygen nucleophiles; 3.4.1.4 Sulfur nucleophiles; 3.4.1.5 Phosphorus nucleophiles; 3.4.1.6 Halogen nucleophiles; 3.4.2 Reaction with organometallic species; 3.4.3 Cycloaddition reactions; 3.4.3.1 [2 + 4]-Diels-Alder cycloadditions; 3.4.3.2 1,3-Dipolar cycloadditions; 3.5 Conclusions; 3.6 Experimental procedures; 3.6.1 (Cyano{[(trifluoromethyl)sulfonyl]oxy}iodo)benzene, 7  
3.6.2 General procedure for the preparation of -alkyl- and -phenylethynyl(phenyl)iodonium triflates, 10

---

## Sommario/riassunto

This comprehensive handbook presents the full potential of modern acetylene chemistry, from organic synthesis through materials science to bioorganic chemistry. K. Houk, H. Hopf, P. Stang, K. M. Nicholas, N. Schore, M. Regitz, K. C. Nicolaou, R. Gleiter, L. Scott, R. Grubbs, H. Iwamura, J. Moore, and F. Diederich - internationally renowned authors introduce the reader, in a didactically skilful manner, to the state-of-the-art in alkyne chemistry. Emphasis is placed on presenting carefully selected and instructive examples as well as essential references to the original literature.

---